Management Console Reference Guide

hp StorageWorks File System Extender

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This reference guide describes the Management Console for the File System Extender software. It includes installation and configuration procedures, and a description of commands.

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File System Extender Management Console Reference Guide
First Edition (January 2005)

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about this guide

This guide provides information to help you install the FSE Management Console software, configure the installation, and familiarize yourself with the application.

Intended Audience

FSE users and system administrators who are experienced with the following (depending on the type of installation):

- SUSE LINUX Enterprise Server 8 (SLES8) or RedHat Enterprise Linux 3 operating system (abbreviated to Linux throughout this guide).
- Windows 2000 or Windows 2003 operating system (abbreviated to Windows throughout this guide).
- General FSE operation and administration.

Prerequisites

Before you set up the FSE Management Console, make sure you have a correctly installed and running FSE installation. See the documentation listed below for further information.

- *FSE Release Notes* (*RelNo.pdf* on the installation CD)

  Information on product requirements, new features, limitations, and recommendations.

- *FSE User Guide* (`UserG.pdf` on the installation CD)

  Intended for FSE users. A description of basic concepts of the FSE installation as well as typical tasks needed for operating FSE.

- *FSE Installation Guide* (`InstG.pdf` on the installation CD)

  How to install the FSE software; intended for system administrators. It details software and environment requirements and includes mandatory pre-installation and preparation procedures.

Getting Help

If you still have a question after reading this guide, contact an HP authorized service provider or access our web site: http://www.hp.com.

HP Technical Support

Technical support information can be found at the HP Electronic Support Centers at the following website: http://www.hp.com/support/.

Be sure to have the following information available before calling:

- Technical support registration number (if applicable)
- Product serial numbers
- Product model names and numbers
- Applicable error messages
- Operating system type and revision level
- Detailed, specific questions.

HP Storage Web Site

The HP web site has the latest information on this product, as well as the latest drivers. Access storage at: http://www.hp.com/country/us/eng/prodserv/storage.html. From this web site, select the appropriate product or solution.

HP Authorized Resellers

For the name of your nearest HP authorized reseller:

- In the United States, call 1-800-345-1518
- In Canada, call 1-800-263-5868
- Elsewhere, see the HP web site for locations and telephone numbers: http://www.hp.com.

Introduction

1

This chapter presents the basic client-server structure of the FSE Management Console application, and describes its use of log files for debugging purposes:

- Overview of the Management Console: Overview, page 7
- Introduction to the server and client components: Server-Client Structure, page 8
- Management Console's log files, used to debug the application: Logging and Debug Levels, page 8.

Overview

The FSE Management Console is a graphical client to the existing FSE Linux/Windows application, providing FSE users with an easy way to configure and operate the FSE installation.

The major features of the Management Console are:

- Monitoring
- Administration
- Configuring.

Both the Management Console server and client software can be executed on Windows and Linux platforms.

The Management Console runs as a client-server software application. The server part (Management Console server) runs as a background standalone application and provides access to FSE data.

The client part (Management Console client) runs as standalone application and provides the configuration, administration and monitoring features for FSE. You can use the Management Console client from anywhere in the intranet.

Note: Connections between client and server through a firewall are not supported.

Server-Client Structure

Management Console Server

The Management Console server acts as a CORBA servant, giving access to different functions such as Logon, Administration, and so on. The server configuration is automatically saved in an external configuration file.

The Management Console server maintains its own information pool about FSE objects and their state. The information pool is updated once per 300-second-range (the default value; it can be changed) contacting the FSE installation's MIF object, which performs all the configuration and administration actions on the system requested by the Management Console client. During the startup procedure, the Management Console server queries the CORBA Name Service for a registered MIF object for the specified system. If the resource is found successfully, the server stores the pointer and continues the initialization procedure — otherwise it stops with a corresponding diagnostic message.

If the connection with the client host is lost, a manual re-connect is required. Cached information, however, remains available to the user and can be accessed via the Management Console client.

Management Console Client

The Management Console client software application allows you to monitor, configure, and maintain FSE objects. There can be multiple instances of the Management Console client, but a login is required for each instance.

If the connection between client and server is lost, a manual re-connect is required. An automatic reconnect, after configuring this option, is also possible. The cached information, however, remains available to the user and can be accessed via the Management Console client without an additional login.

Logging and Debug Levels

Both the Management Console server and the Management Console client can be configured to log their activities to log files. A specific path and filename can be defined using the appropriate command line options or the corresponding configuration file parameters.

Logging is done according to the specified debug level, which is encoded in two parameters: `-d <level>` and `-D <object>`:

```
# Debug level after -d key can be either integer or literal:
  0 = "No"  - no trace information (default value)
  1 = "Err" - only errors
  2 = "Wrn" - errors and warnings
  3 = "Inf" - errors, warnings and trace
  4 = "Trc" - errors, warnings and detailed trace

# Trace object after -D key is literal

  #   For GUI Server
  "Mif" ("MifD")     – the communication activity between GUI
                       Server and MIF Server;
  "Cs" ("CsD")       – the communication activity between GUI
                       Server and GUI Client;
  "Pool" ("PoolD")   – activity on Pool object;
  "Flt" ("FltD")     – activity on Filter objects;
  "All" ("AllD")     – whole activity for all logical parts of
                       GUI Server

#   For GUI Client
  "Comm" ("CommD")   – communication activity between GUI Client
                       and GUI Server modules;
  "Thrd" ("ThrdD")   – thread activity (receiving events from
                       other threads), locking/unlocking thread
                       synchronization objects, etc.;
  "Gui" ("GuiD")     – main GUI thread activity, processing the
                       received information and user input
events;
  "All" ("AllD")     – whole activity for all logical parts of
                       GUI Client.

  # The suffix "D" in object names means "detailed"
```

The default log file and its location for the Management Console server is:

- Windows: *%InstallPath%*\var\log\guisrv.log
- Linux: /var/opt/fse/log/guisrv.log.

The default log file location for the Management Console client is:

- guiclt.log, created in the application's current working directory.

Installing and Uninstalling

2

This chapter describes how to install the Management Console's server and client components, on both Linux and Windows systems, and how to uninstall an existing installation.

- Installing the server component on Linux and Windows — page 11
- Installing the client component on Linux and Windows — page 13
- Uninstalling existing installations — page 15.

Installing the FSE Management Console Server

Windows-Based Platform

To install the Management Console server:

Start `setup.exe` from the `\Win32\GUI\Server` directory on the installation CD and follow the installation steps:

1. Initializing

   The setup program initializes the installation files, while information about the Management Console server version is displayed.

2. Terminating applications

   If other applications are still running, HP recommends that you stop them before continuing:

   a. Click on `Cancel` to terminate the setup.

   b. Close all active applications.

   c. Re-start the Management Console server setup.

   Click the `Next` button to continue.

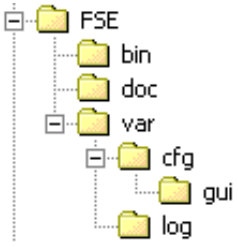
3. Agreeing to the license agreement

   Read the FSE Management Console client license agreement. If you agree to it, click `Yes`. If you click `No`, the installation will be canceled.

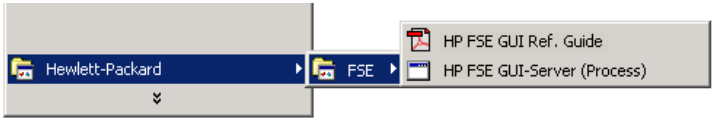
4. Copying the client files

   The Management Console client files are unpacked and copied to the installation directory (`Program Files\Hewlett-Packard\FSE`), after which you are informed about the successful completion of the installation.

After the installation is complete, there are additional directories in the Management Console server installation path:



The setup also adds two new entries to the program folder `Hewlett-Packard/FSE`:



Linux-Based Platform

To install the Management Console server:

Run the rpm package:

```
rpm -i fse-gui-server-3.1-X.i386.rpm
```

where *X* is the build number.

The `rpm` package is on the installation CD in the following directory:

— *SUSE LINUX Enterprise Server 8:* `/sles8/ia32/GUI`

— *Red Hat Enterprise Linux Update 3:* `/rhel3/ia32/GUI`

During the installation the following files are created:

```
/opt/fse/lbin/guisrv
/opt/fse/lib/guiprod.cfg
/opt/fse/doc/RefGuide.pdf
/var/opt/fse/cfg/gui/guisrv.mif.conf
/var/opt/fse/cfg/gui/guisrv.conf
/var/opt/fse/cfg/gui/guisrv.users.db
/etc/init.d/guisrv
```

Installing the FSE Management Console Client

For both Linux- and Windows-based platforms, the Management Console client has no external dependencies. Only a network connection and naming services are required.

Windows-Based Platform

To install the Management Console client, start `setup.exe` from the installation CD in the `\Win32\GUI\Client` directory and follow the installation steps:

1. Initializing

   The setup program initializes the installation files while information about the Management Console client version is displayed.

2. Terminating applications

   If other applications are still running, HP recommends that you stop them before continuing with the setup:

   a. Click on `Cancel` to terminate the setup.

   b. Close all active applications.

   c. Re-start the Management Console client setup.

   Click the `Next` button.

3. Agreeing to the license agreement

   Read the FSE Management Console client license agreement. If you agree to it, click `Yes`. If you click `No`, the installation will be canceled.

4. Copying the client files

   The Management Console client files are unpacked and copied to the installation directory (`Program Files\Hewlett-Packard\FSE`), after which you are informed about the successful completion of the installation.

After the installation is complete, there are two additional directories (`bin` and `doc`) in the Management Console client installation path:

Two new entries (`FSE GUI Ref. Guide` and `FSE GUI-Client`) are added to the program folder `Hewlett-Packard\FSE`:

Linux-Based Platform

To install the Management Console client:

Run the rpm package:

```
rpm -i fse-gui-client-3.1-X.i386.rpm
```

where *X* is the build number.

The `rpm` package is on the installation CD in the following directory:

— *SUSE LINUX Enterprise Server 8:* `/sles8/ia32/GUI`

— *Red Hat Enterprise Linux Upd.3:* `/rhel3/ia32/GUI`

During the installation the following files are created:

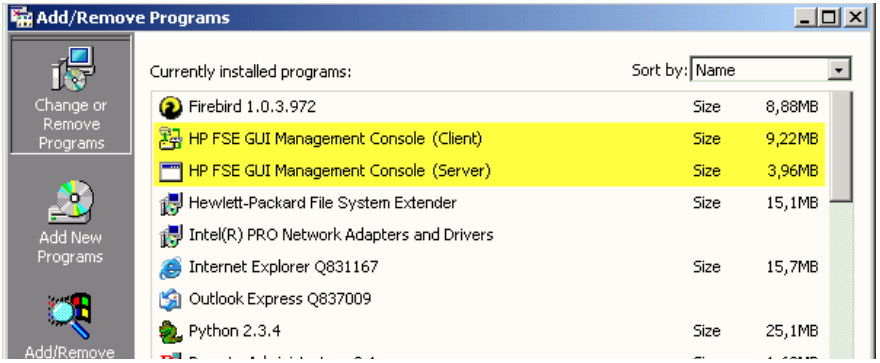
```
/opt/fse/bin/guiclt
/opt/fse/bin/libqt-mt.so.3
/opt/fse/bin/guiprod.cfg
/opt/fse/doc/RefGuide.pdf
```

Uninstalling

Windows-Based Platform

To uninstall the FSE Management Console:

Uninstall through **Add/Remove Programs** in the Windows **Control Panel**:



Linux-Based Platform

To uninstall the Management Console server:

Run the rpm command:

```
rpm -e fse-gui-server-3.1-X
```

where *X* is the build number.

To uninstall the FSE Management Console client:

Run the rpm command:

```
rpm -e fse-gui-client-3.1-X
```

where *X* is the build number.

Configuring, Starting, and Stopping

3

This chapter provides instructions for initial configuration of the Management Console, and on how to start and stop both the server and client components on Linux and Windows.

- Using the configuration file — page 17
- Starting and stopping the console using command line options — page 20.

Configuring the Management Console

Configuring the Management Console Server

The Management Console server has its own configuration file where you can specify parameters that control its operation.

The default location for the file is:

- Windows: *%InstallPath%*\var\cfg\gui\guisrv.conf
- Linux: /var/opt/fse/cfg/gui/guisrv.conf.

The configuration file is a text file. Lines beginning with '#' are comments:

```
# File   : guisrv.conf
  # Purpose: FSE GUI Server configuration file

  # The FSE GUI Server log file name.
  GUI_LOGFILE = ..\var\log\guisrv.log

  # MIF pooling interval (in seconds).
  GUI_POLLINTERVAL = 300

  # user database location
  GUI_USERDB = ..\guisrv.users.db

  # FSE System log file
  LOG_FILE = ..\etc\fse.log
```

```
  # configuration file
  CFG_FILE = ..\etc\services.cfg

# GUI Server debug level
  DEBUG_LEVEL = -d4 -DAll

# MIF URL to bind to MIF object (<context>/<name>)
  MIF_URL = FSE/mgr/$(SERVER)/mif
  # $(SERVER) is SERVER value in services.cfg file

  # MIF map file if needs
  MIF_MAP = ..\etc\guisrv.mif.conf

  # path to OMNIORB configuration file
  ORB_CONFIG = ..\etc\omniorb.cfg

  # ORB parameters: for instance, -ORBtraceLevel 10
  # default:
  #    ORB_ARGS = -ORBendPoint giop:tcp::4055
```

The following table lists the configurable parameters:

Parameter	Description
GUI_LOGFILE	The location for the Management Console server log file, destination for all diagnostic information, warnings, errors, and debug output the GUI server produces. *Windows default:* *%InstallPath%*\var\log\guisrv.log *Linux default:* /var/opt/fse/log/guisrv.log
GUI_ POLLINTERVAL	How often the Management Console server polls the FSE installation for data (number, in seconds). The default value is: 300 (5 minutes).
GUI_USERDB	The location for the Management Console server user database. *Windows default:* *%InstallPath%*\var\cfg\gui\guisrv.users.db *Linux default:* /etc/opt/fse/gui/guisrv.users.db
LOG_FILE	The location for the FSE installation that needs to be accessed by the Management Console server. *Windows default:* *%InstallPath%*\var\log\fse.log *Linux default:* /var/opt/fse/log/fse.log

Parameter	Description
CFG_FILE	The location for the FSE installation services configuration file. *Windows default:* *%InstallPath%*\etc\services.cfg *Linux default:* /etc/opt/fse/services.cfg
DEBUG_LEVEL	The debug level information for the Management Console server (for details see the command line options description). You can override the setting by specifying the corresponding command line option when starting the Management Console server. *Default:* d1 -DAll
MIF_URL	The CORBA Name Service URL of the FSE installation's MIF object, used by the Management Console server to interact with FSE. *Default:* FSE/mgr/*%SERVER%*/mif **Note:** You are recommended **not** to change this parameter.
MIF_MAP	The location of the MIF-to-GUI translation file which contains mappings for values returned by the FSE installation's MIF object. *Windows default:* *%InstallPath%*\var\cfg\gui\guisrv.mif.conf *Linux default:* /etc/opt/fse/gui/guisrv.mif.conf **Note:** You are recommended **not** to change this parameter.
COMNIORB_CONFIG	The location of the omniORB.cfg file, which can also be specified with the OMNIORB_CONFIG environment variable before starting the FSE Management Console server. No default value.

See also the *FSE User Guide*.

Configuring the FSE Management Console Client

The FSE Management Console client has no specific configuration files.

Required omniorb.cfg File

Use of omniorb.cfg is required on a system with:

- more than one network adapter
- private network communication

See the *FSE User Guide* for more details.

- For the FSE Management Console server, the link can now specified in the guisrv.conf (see "Configuring the Management Console Server" on page 17).

- For the FSE Management Console client, the environment variable `OMNIORB_CONFIG` must be set before starting the FSE Management Console client.

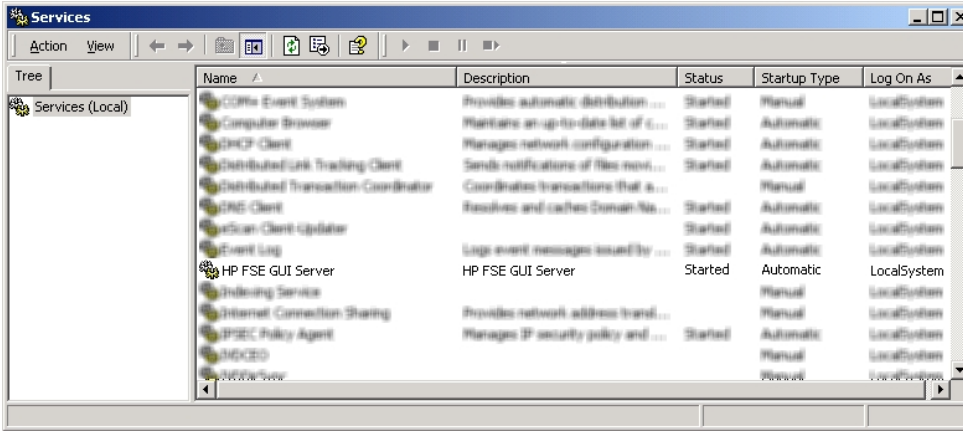
Starting and Stopping

Starting and Stopping the FSE Management Console Server

The FSE Management Console server can run in foreground or background mode, depending on the command line options specified on start up.

On Windows platforms, you can specify that the Management Console server starts as a Windows service in the background or as a foreground console application.

Tostart or stop the FSE Management Console server as a Windows service, use the Windows service manager as shown below. For further information about the Windows service manager see the documentation about Microsoft Windows.



On Linux platforms, this corresponds to a daemon (detached process) and a foreground application.

Command line options

The command line options allow you to set up the configuration file path and the level of debugging as well as controlling background and foreground execution.

For Windows platforms:

```
# guisrv - FSE GUI Server ver. 3.1.5

Copyright (C) 2004 Hewlett-Packard
Usage: guisrv {<options>}

     <options> are:
     -I - install as Windows NT service
     -U - uninstall Windows NT service
     -S - start Windows NT service and install it if necessary
     -T - stop Windows NT service
     -F - startup in foreground mode
     -d<level> -D<object> - debug level (default -d2 -DAll):
            1 - only errors
            2 - errors and warnings
            3 - errors, warnings and trace
            4 - errors, warnings and detailed trace
     -f<file name> - configuration file
                       (default ...\var\cfg\gui\guisrv.conf)
```

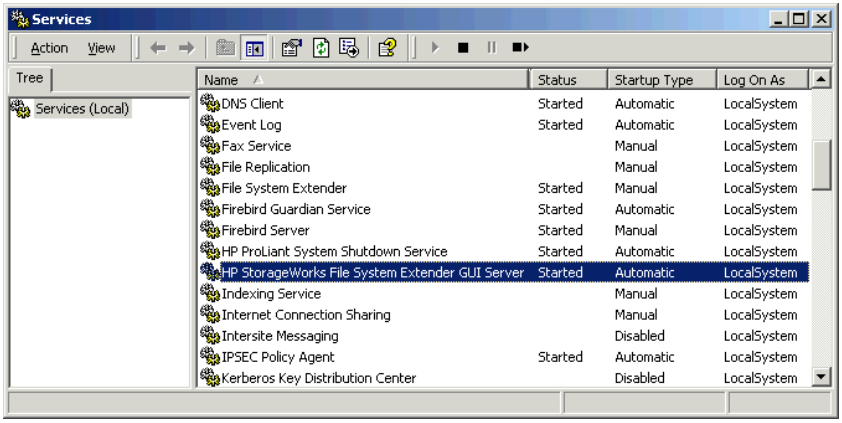
For Linux platforms:

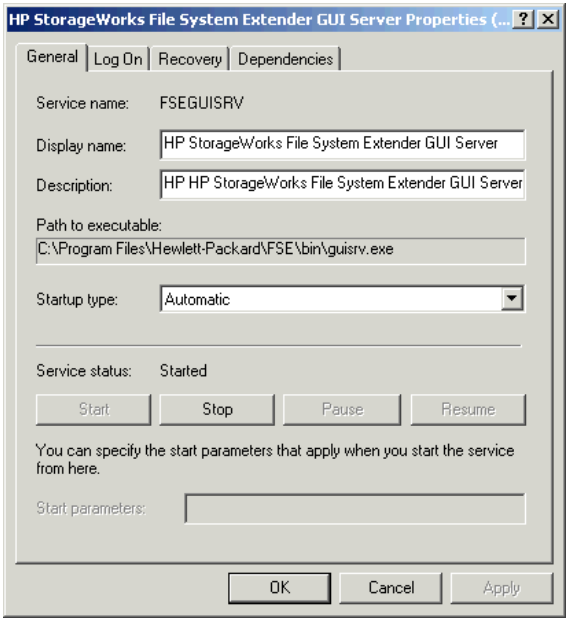
```
# guisrv - FSE GUI Server ver. 3.1.5

Copyright (C) 2004 Hewlett-Packard
Usage: guisrv {<options>}

     <options> are:
     -I - startup in foreground mode
     -d<level> -D<object> - debug level (default -d2 -DAll):
            1 - only errors
            2 - errors and warnings
            3 - errors, warnings and trace
            4 - errors, warnings and detailed trace
     -f<file name> - configuration file
                      (default /var/opt/fse/cfg/gui/guisrv.conf)
     -[h?] - usage information
```

Windows platform

- *Windows service mode*
  This is the recommended mode.
  (see the `-U`, `-I`, `-T` command line options)
- *Foreground mode* (console application)
  (see the `-F` command line option)

If requested to install as a service, the Management Console server registers itself with the Service Manager under the name of “FSE GUI Server” and is scheduled to start automatically on system boot.





Linux platform

Daemon (detached process) mode

This is the default and recommended mode.

When starting in this mode, the Management Console server is detached from the controlling terminal and continues with the execution after the user session has finished.

During installation, the `guisrv` start up script is copied to the `/etc/init.d` directory and is enabled for init levels 3-5. Therefore, the Management Console server starts automatically each time the system boots with these levels. The only dependency for the Management Console server at start up is the OmniORB Name Service (`omninames`), which must be started first.

Use `/etc/init.d/guisrv` to control the Management Console server application:

```
/etc/init.d/guisrv [start|stop|status|restart]
```

`start`	Effectively start GUI Server as a daemon
`stop`	Stop the server, if it is currently running
`status`	Determine if the server is currently running
`restart`	Stop and start the GUI server

Foreground mode (console application)

(see the `-F` command-line option)

As a foreground application, the Management Console server blocks the command line and will be terminated when the user session is finished or if any termination signal (for example, Ctrl-C) is received.

Starting and Stopping the Management Console Client

When starting up, the Management Console client reads the initialization file for the current user. This file contains all the current settings made by a user during the last session, for example, defined systems with connection details and settings from the Settings dialog. The environment is then restored to its original state — the stored settings are applied and the corresponding system objects are added to the tree. If a password has been previously saved for a system, the Management Console client tries to reconnect silently, otherwise the connection dialog appears.

The location for the Management Console client initialization file is:

- On Windows:
  `C:\Documents and Settings\<username>\Application Data\guicltrc`
- On Linux:
  `<user home directory> ($HOME).`

Command line options

The command line options allow you to set the log file path and the level of debugging:

```
FSE GUI Client ver. 3.1
  Copyright (c) 2004 Hewlett-Packard
  Usage:
  -----------------------------------
  guiclt [-l <logfile>] [-d<level> -D<object>]
  -l<logfile>    - does logging into the specified <logfile>;
  -d <level> -D <object> - specifies the debug level.
  -----------------------------------
```

Windows platform

Use the shortcut `Start > Programs > Hewlett-Packard > FSE > HP FSE GUI-Client`

or start *%InstallPath%*`\bin\guiclt.exe` to launch the Management Console client.

Linux platform

On Linux platforms, the Management Console client is an X11 application that can be started from the command line. The requirements are the same as for any X11 application. Check if the `DISPLAY` environment variable is correctly set before starting it.

`DISPLAY=<`*hostname*`>:<`*display*`>[.<`*screen*`>]`

For example:

```
$ export DISPLAY=qslinux:0
$ guiclt
```

Connecting and Configuring

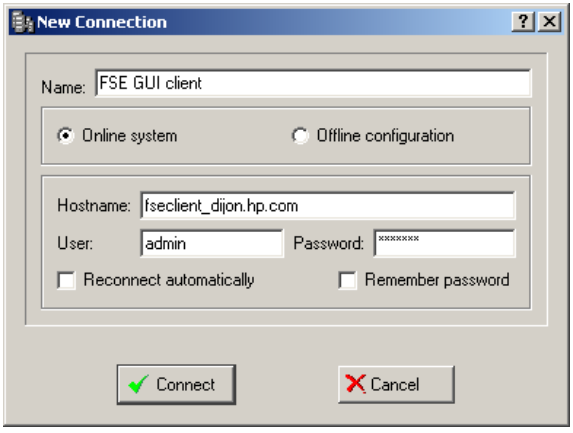
4

This chapter explains how to connect to the running FSE installation, or to run the Management Console in offline configuration mode:

- Logging in to FSE: New Connection Dialog, page 25
- Connecting to a running FSE installation: Connect to FSE (Online Mode), page 26
- Configuring an FSE installation without connecting to it: Configure FSE (Offline Mode), page 26.

New Connection Dialog

After the Management Console client is started, if no FSE installations have been previously defined, the login dialog pops up:



You can now either connect to an online FSE installation, or start an offline reconfiguration session.

Connect to FSE (Online Mode)

For the *online mode*, enter the following to login to the FSE Management Console server:

- System name (a descriptive name subsequently displayed to identify the connection)
- Hostname (actual host name where the Management Console server resides, as it is registered in the CORBA naming service)
- Username and password attributes.

You can reconnect later at any time by selecting **Connect** in the pop-up menu or main menu for the given system object.

Note: The network between the server and client machine must be correctly set up (including firewall), and the FSE Management Console server must be running. Otherwise the connection cannot be established.

Caution: For security, change the default user ID and password (`admin`, `<empty>`) as soon as possible.

Configure FSE (Offline Mode)

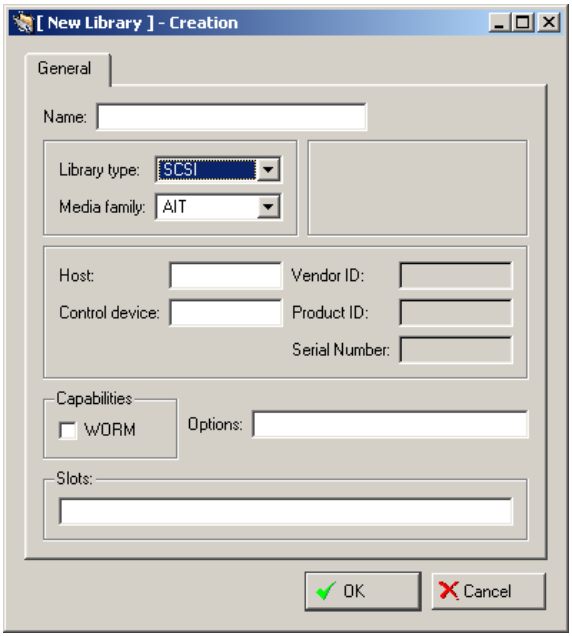
You can connect in *offline mode* without providing hostname and user logon parameters.

In offline configuration mode FSE can be configured without a connection to the FSE installation itself. The configuration is stored to the standard FSE files and is later applied to the FSE installation. The **Jobs**, **Log**, and **Users** sections are not accessible in this mode. The same is true of **All Media** and **Unassigned Media** containers because media data appear only after inventory operations, and this requires online connection.

Typically, to configure FSE in offline mode:

1. Logon in offline mode (no password).

2. Create libraries with appropriate control hosts, required media families, and slots/storages.

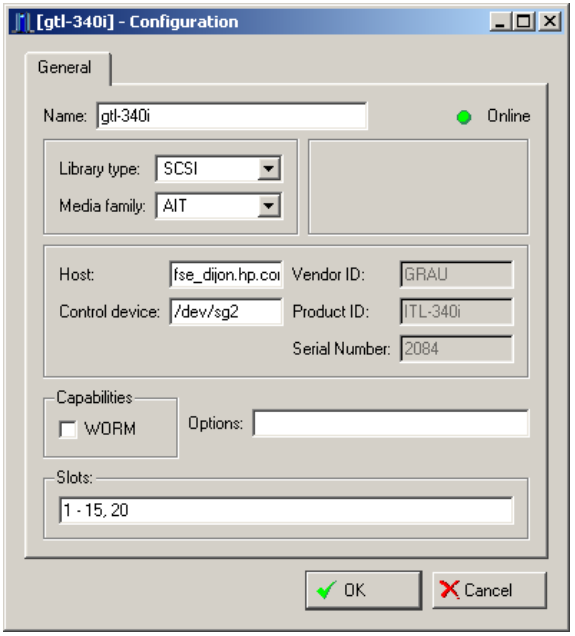


3. For each library, create the required number of drives; do not forget the media family and other resources.
4. Create media pools for all library media (new and existing).
5. Create partitions and assign media pools to them.

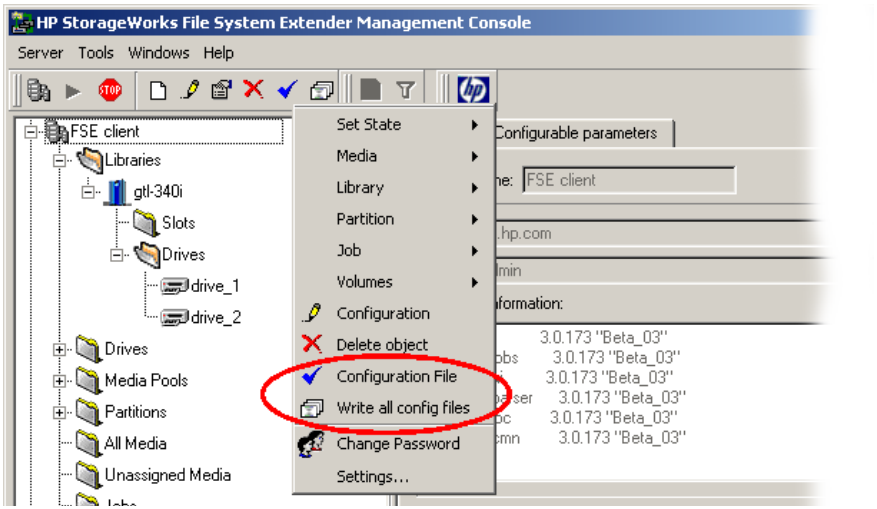
Tip: All these “creation” windows look similar. For library, drive, media pool, and partition properties and fields, see the following sections.

---

6. Review the complete configuration and update it if required.



7. Save the configuration files (**Write all config files**).



The files can also be saved individually (**Configuration File**).

Management Console Basics

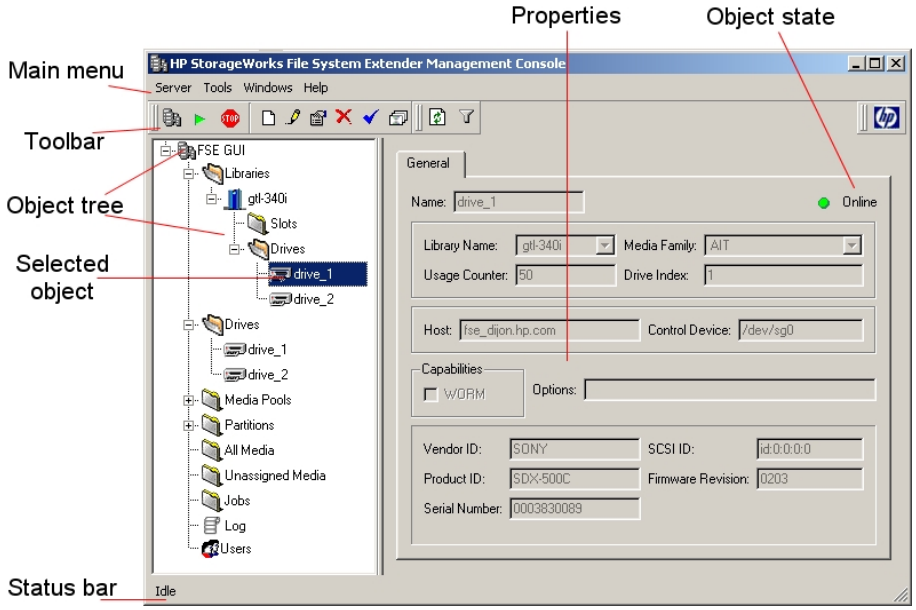
5

This chapter describes in detail the user interface of the Management Console, comparing the two conceptual “objects” it employs - *containers* and *physical objects* - and lists all the commands available from the main menu and their shortcuts in the toolbar:

- Explanation of the user interface components: The Management Console Layout, page 30
- Comparison of the conceptual entities that represent Management Console objects: The Object Tree, page 31
- List of the commands available in the main menu: The Main Menu, page 35
- List of the shortcuts to Management Console commands: The Toolbar, page 39.

The Management Console Layout

The layout of the Management Console user interface is shown in the following diagram:



The **Main menu** area provides the basic FSE Management Console functions. Some of these are duplicated on the **Toolbar** with corresponding icons.

The **Object tree** pane (left) contains the object tree with expand/collapse buttons. Expanding the tree does not select the object from the tree. To select an object, click it.

The property page for the selected object is displayed in the right pane (**Properties**). For objects containing other objects (container objects) it shows a list panel, which displays all the child objects. Click on a column title to specify the sort orders.

The properties pane displays the properties of the **Selected object** in the tree. If the actual property is a list of items, double-click on a single item to open an advanced properties pop-up screen for this object. For details on the meaning of property fields, see the *FSE User Guide* in the command line reference section.

You navigate through the list, monitoring, configuring, and managing the objects and selecting the object and field filters. Each tree object, whether container or single object, can be requested to show a property window with a pop-up context menu or the main menu properties item.

The **Status bar** shows the number of selected objects with their current status.

There are two different ways of updating objects:

- *Online* — when requested data is changed in the Management Console server, the Management Console client is notified and the data is refreshed. This is the default behavior. The refresh-rate depends on the Management Console server's polling interval.
- *On Request* — when the refresh action is requested by a user or an object, the Management Console server is forced to query the MIF and to return the current data immediately.

The icons displayed in the object tree changes in case of any problem with one of the assigned objects. For example if a drive is in error state, the drive container icon is displayed with a "?", similarly to the Windows Device Manager.

The Object Tree

FSE Management Console Objects

There are two types of Management Console objects:

- *Containers* are completely virtual objects and hold at least one level of child objects which are either virtual (libraries, media pools) or physical (drives, media). A container object provides the **New** action, which usually means **Create a new object of the container type**, for example, a new library.

  The exceptions are Jobs (actions available for each Job, but not for the folder), and the media containers All Media and Unassigned Media (**New** in these cases means **Assign media to the media pool**).

  Containers do not have creation and configuration windows.

- *Physical objects* correspond either to FSE elements (drives) or to FSE actions (logs). A physical object may provide an **Enable**/**Disable** action, which is used to change the object's state. Most of the physical objects have **Configuration** and **Configuration File** actions available which will open the configuration window or save its configuration file to disk.

Items in the Object Tree

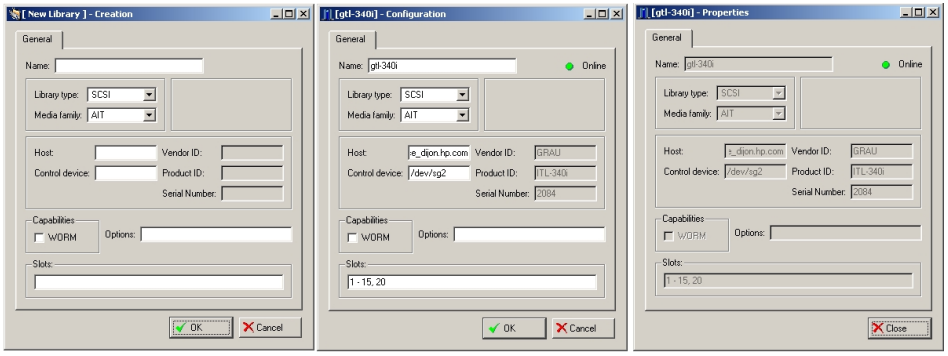
The object tree contains the items listed below. **Boldface** text indicates an item as displayed in the tree; *italics* indicate an object displayed by its user-defined name.

- *System* ... The root of an object tree. All other objects and containers are part of the system.
- **Libraries** container ... Holds a list of created and configured libraries for the FSE installation.
- *Library* ... The logical library configured for the FSE installation. In addition to its properties, it holds a list of slots and the drives container with the drives assigned.
- *Library* > **Slots** ... Holds a list of slots configured for the current library.
- *Library* > **Drives** ... Holds a list of drives configured for the current library.
- *Library* > **Drives** > *Drive* ... The drive assigned to the current library. The drive is used to execute read/write operations with the available media.
- **Drives** container ... Holds a list of all drives configured for all libraries in the current FSE installation.
- **Drives** > *Drive* ... The drive assigned to any of the libraries.
- **Media Pools** container ... Holds a list of all media pools created and configured in the FSE installation.
- **Media Pools** > *Media Pool* ... The media pool created in the FSE installation. Holds a list of media assigned to this pool.
- **Partitions** container ... Holds a list of FSE partitions. Each partition can also contain one or more media pools. All data stored on a medium assigned to the media pool contained in the partition is considered as data stored on this partition.
- **Partitions** > *Partition* ... The FSE file system. In addition to its properties, it holds a list of all media available for it and the media pools container with the media pools assigned.
- **Partitions** > *Partition* > **All Media** container ... Lists all media available for the partition.
- **Partitions** > *Partition* > **Media Pools** container ... Holds a list of all media pools assigned to the partition.

- **Partitions** > *Partition* > **Media Pools** > *Media Pool* ... The media pool created in the FSE installation and assigned to the partition. Holds a list of media assigned to this pool.
- **Jobs** container ... Lists all jobs started on the FSE installation, showing the status of each job and other properties (job type, priority).
- **All Media** container *(online mode only)* ... Lists all media currently available in the FSE installation.
- **Unassigned Media** container *(online mode only)* ... Lists all media currently available in the FSE installation but not assigned to any of its pools.
- **Log** *(online mode only)* ... Shows the error and warning messages of the FSE installation log.
- **Users** *(online mode only)* ... Contains the list of users authorized to log in to the FSE Management Console.

New, Configuration, and Properties Dialogs

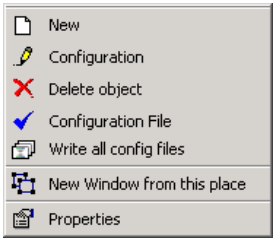
New (**Creation**), **Configuration**, and **Properties** dialogs are identical for a dedicated object. The only difference between them is whether the properties are read-only or editable.



For details about the individual objects see the appropriate sections below.

Actions on Objects

Select an object in the object tree with the right mouse button to open a pop-up menu similar to the following:



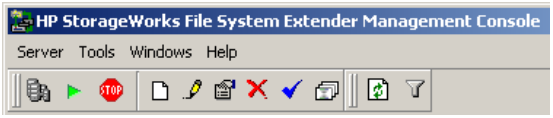
- **New** creates a new object of the type selected (for example, a new library, or a new media pool).
- **Configuration** opens a pop-up configuration window for the selected object.
- **Delete object** removes the selected object.
- **Configuration File** opens a pop-up window with the configuration file for the selected object. The file can be saved to disk.
- **Write all config files** saves all configuration files related to the objects in the object tree to disk.
- **New Window from this place** opens a new Management Console client instance from the current pane.
- **Properties** opens the pop-up properties window for the selected object.

Note: The availability of these and other actions depends both on the object selected and the object state.

There are two different types of actions:

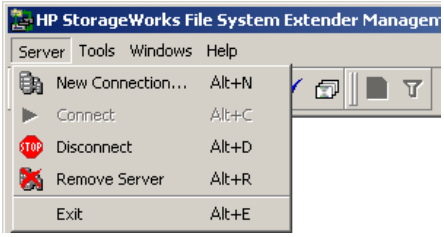
- *Plain* actions are executed immediately (for example, **Enable/Disable Drive**, **Configure Drive**).
- *Advanced* actions create an admin job to be executed (for example, **Format Media**, **Initialize Media**).

The Main Menu



The main menu contains the menu bar and the toolbar. The menu bar contains all features available in the FSE Management Console; the toolbar provides some basic operations.

Server Menu

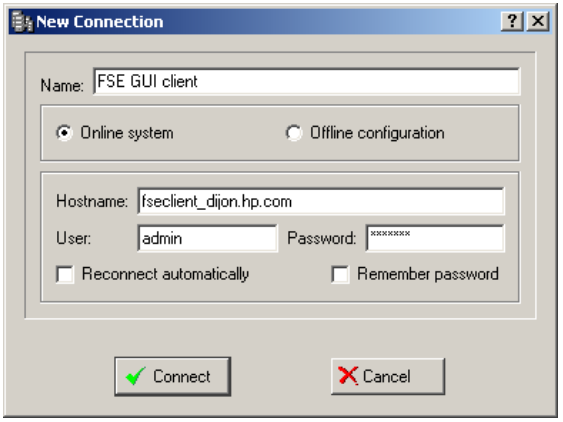


The **Server** menu includes the following options:

- **New Connection** ... Connects to other server.
- **Connect** ... Restores connection with the server.
- **Disconnect** ... Breaks the connection with the server.
- **Remove Server** ... Removes the object from a tree.
- **Exit** ... Closes the Management Console.

New connection

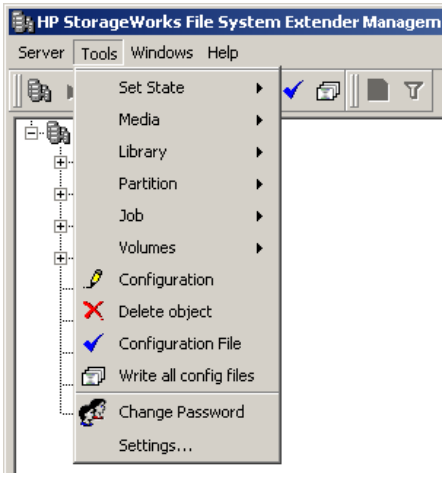
The following dialog is displayed when a new connection is requested. Enter attributes and click **Connect**.



- **Name** ... specifies a name for the connection. The text entered here identifies the client in the object tree.
- **Online system/Offline configuration** ... specifies if the connection is to be made to an online system or if it should be in offline configuration mode. When **Offline configuration** is checked, the other connection attributes are disabled.
- **Hostname** ... specifies the host name (or IP address) of the system running the Management Console server.
- **User** ... specifies the name of the user logging in to the Management Console. The user name must be available in the Management Console server user-database in order to be able to establish the connection.
- **Password** ... specifies the password for the user.
- **Reconnect automatically** ... when checked, specifies that the Management Console client should try to reconnect automatically in the event the connection is broken unexpectedly.
- **Remember password** ... when checked, specifies that the Management Console client should cache the password and not ask for it on any subsequent reconnection.

If the connection is successful, the system object is added to the object tree.

Tools Menu



The **Tools** menu includes the following options:

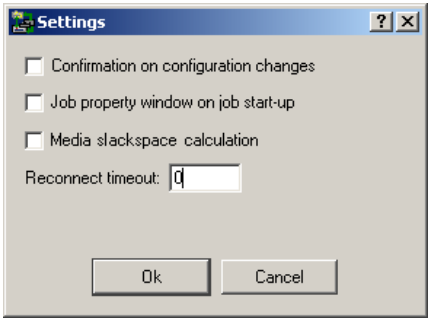
- **Set State** *(active only for system, library, and drive objects)* ... Opens another menu level for you to set the object state:
  - Enable
  - Disable
- **Media** *(active only for media objects)* ... Opens another menu for:
  - Marking media as Good/Unreliable/Unusable
  - Assigning media to and removing media from the media pool
  - Copying the content of media
  - Duplicating media
  - Re-creating fast recovery information
  - Reorganizing media
  - Formatting and initializing media
- **Library** ***(****active only for library objects)* ... Opens another menu level for:
  - Rescanning the existing library (inventory)
  - Updating the existing library
- **Partition** *(active only for partition objects)* ... Opens another menu level for:
  - Triggering the deletion of obsolete data
  - Checking a medium

- — Checking a file system (FS)
- — Recovering the file system catalog (FSC)
- — Recovering a file system (FS)
- — Reorg-Scan

- **Job** *(active only for jobs objects)* ... Opens another menu level for:
  - — Changing a job's priority
  - — Aborting a job
- **Volumes** *(active only for medium volumes)* ... Opens another menu level for:
  - — Reorganizing medium volumes
  - — Closing a medium volume
- **Configuration** ... Opens a pop-up configuration window for the selected object (for example, media pool).
- **Delete object** ... Removes the selected object.
- **Configuration File** ... Opens a pop-up window with the configuration file for the selected object. The file can be saved to disk.

Note: The comments in the configuration file describe values that can be entered into the corresponding fields.

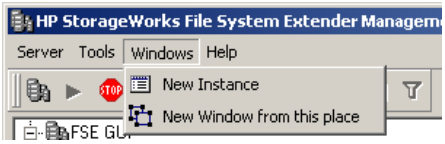
- **Write all config files** ... Saves all configuration files related to the objects in the object tree to disk.
- **Change Password** ... Changes the password of the current user.
- **Settings** ... Opens a pop-up window to specify Management Console settings:



  - — **Confirmation on configuration changes** forces a pop-up confirmation dialog to appear on every configuration action.

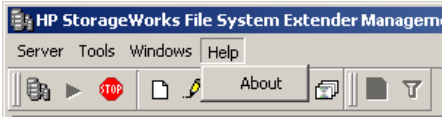
— **Job property window on job start-up** opens a pop-up job properties window when a job initiated by the Management Console client starts.
— **Media slack space calculation** enables or disables calculation and display of an average slack space per media.
— **Reconnect timeout** defines an automatic reconnect time period (300 seconds by default).

Windows Menu



- **New Instance** ... opens a new FSE Management Console client instance from the start pane (that which appears immediately after login).
- **New Window from this place** ... opens a new FSE Management Console client instance from the current pane.

Help Menu



- **About** ... shows the current FSE Management Console software version.

The Toolbar

The toolbar provides easy one-click-access to major functionality. The toolbar contains the following options (marked with their icons):

New Connection ... creates a new connection to an FSE installation.

Connect ... restores the connection with the server.

Disconnect ... breaks the connection with the server.

New ... opens a pop-up “new object” window for the object of the selected type.

Configuration ... opens a pop-up configuration window for the selected object (edit).

Properties ... opens a pop-up properties window for the selected object (view only).

Delete ... removes an object from the tree.

Configuration File ... opens the configuration file for the selected object.

Write all config files ... saves configuration files for all objects in object tree.

Refresh ... loads the latest data directly from the FSE installation and forces refreshing of the Management Console according to the latest changes.

Toggle Filter ... filters objects you have selected from the list on the properties pane.

Keyboard Shortcuts

New Connection Alt+N

Connect Alt+C

Disconnect Alt+D

Remove Server Alt+R

Property... Alt+Enter

Settings Alt+O

Exit Alt+X

Management Console Objects

6

This chapter give detailed descriptions of all Management Console objects, how to create, configure, delete, and view properties of them, and how to perform tasks specific to each object type:

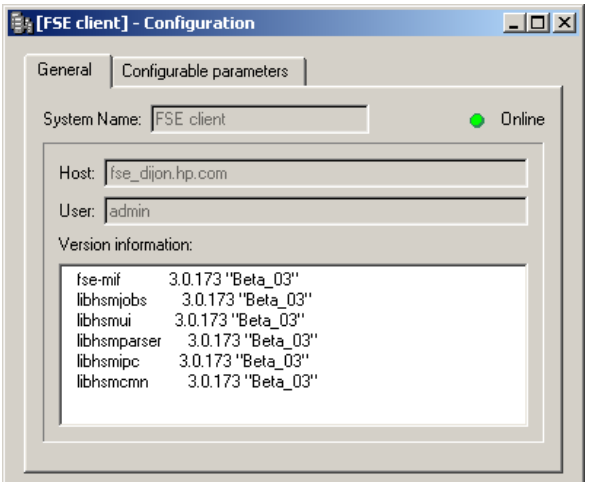
- Managing the Management Console instance: System Object, page 41
- Creating and managing libraries: Libraries Container, page 43
- Creating and managing tape drives: Drives Container, page 46
- Adding media to and managing media pools: Media Pools Container, page 48
- Creating and managing partitions, and performing file system administration tasks: Partitions Container, page 51
- Managing all media in the FSE installation: All Media Container, page 55
- Managing all media in the FSE installation not assigned to a media pool: Unassigned Media Container, page 56
- Managing all running and finished FSE jobs: Jobs Container, page 57
- Viewing errors and warning messages in FSE's log file: Log Container, page 59
- Creating and managing Management Console users: Users Container, page 59.

System Object

Right-click over the system object at the top of the object tree to do the following:

- Reconnect or break connection to the FSE server
- Change the user password
- Delete an object
- View and edit configuration parameters
- View a configuration file
- Save all configuration files to disk
- Open a new window from the current Management Console context

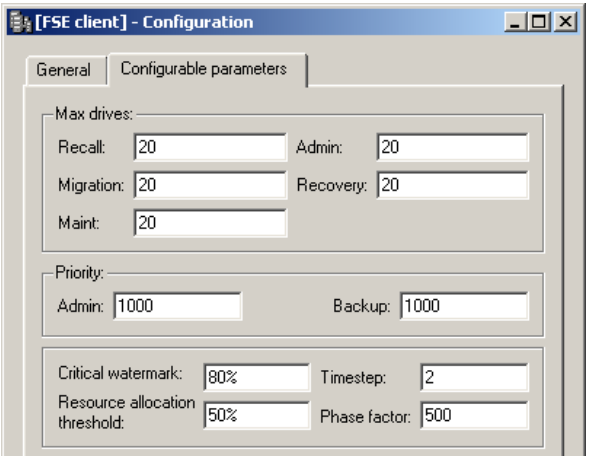
- Display system properties.



The Management Console also indicates the system state with one of the following icons:

	online/connected		offline
	disconnected		error

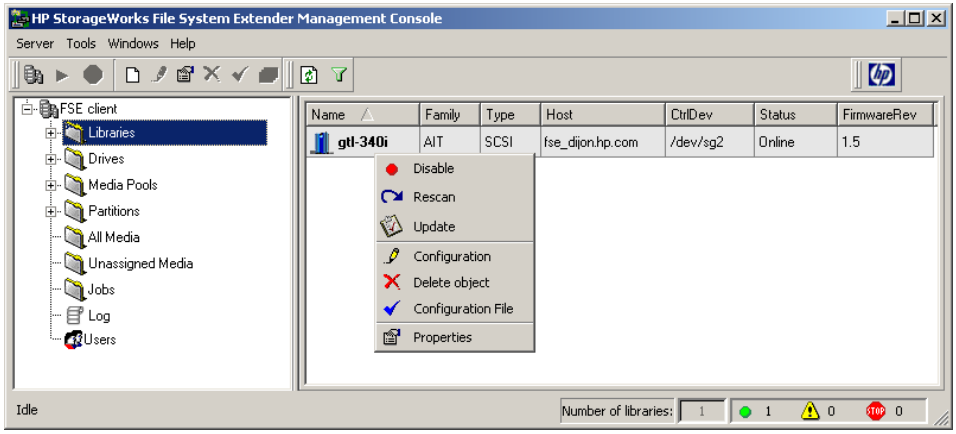
Editable parameters of the system are shown on a separate pane under the **Configurable parameters** tab:



Libraries Container

Right-click over the **Libraries** object in the object tree to do the following:

- Create a new library
- Open a new window from the current Management Console context
- Display general properties of configured libraries.



Clicking on **Libraries** in the tree lists the libraries connected to the FSE installation. Each library contains a list of slots and drives assigned to the library. The slots are specified when the library is created, and the drives are assigned individually after the library object is created.

The properties pane shows a list of libraries, their names, status, and firmware. Double-clicking an object in the list opens a library properties window. For a description of the property fields, see the *FSE User Guide*.

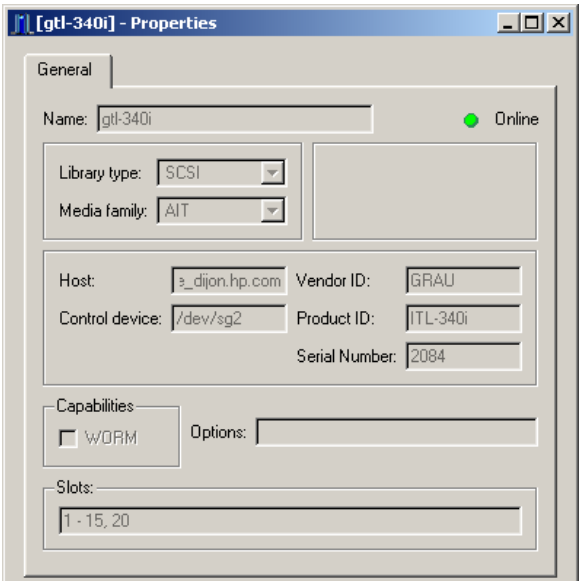
The status bar displays the total number of libraries and indicates the number of libraries in each of the following states:

 online/ready  offline  error

Library

Right-click over a library name in the object tree to do the following:

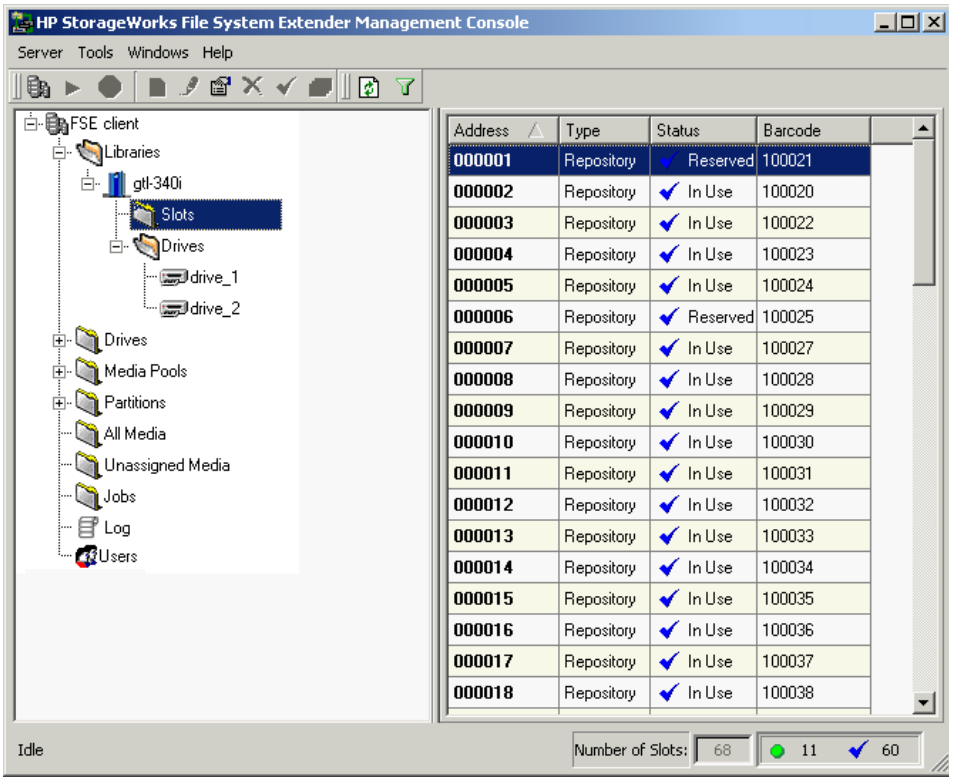
- Change the library's state (enable/disable)
- Rescan the library
- Update the library
- View and edit configuration parameters
- Delete the library
- View a configuration file
- Display the properties of the library.



For a description of the property fields, see the *FSE User Guide*.

Slots container

You can only monitor slot properties — it is not possible to modify them.



The properties pane shows the list of slots, their types, status, and a media barcode if there are any in the slot. Double-clicking a slot in the list opens a properties window for the slot. For a description of the property fields, see the *FSE User Guide*.

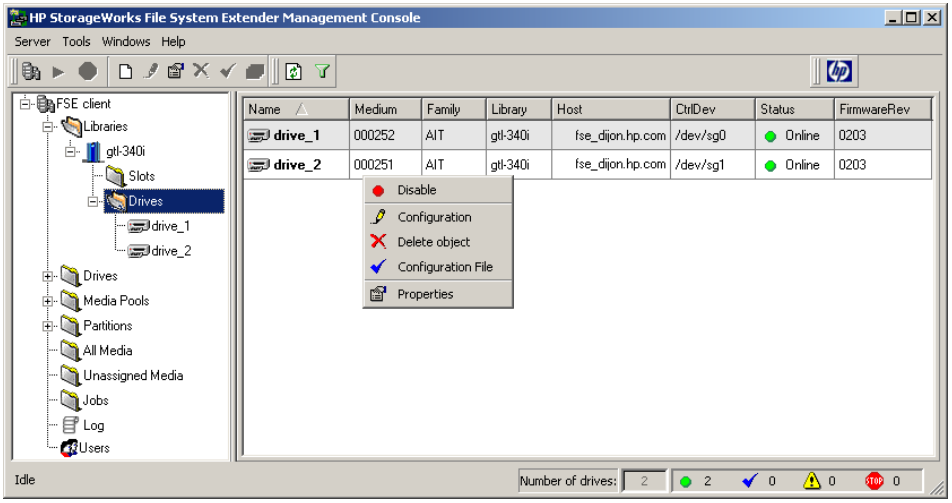
The status bar displays the total number of slots and indicates the number of slots that are free and the number that are in use:

 free  in use

Drives Container

Right-click over the **Drives** object in the object tree to do the following:

- Create a new drive
- Open a new window from the current Management Console context
- Display general properties of configured drives.



The properties pane shows a list of all drives in the FSE installation. The list indicates the drives' types, status, and firmware. You cannot modify the drives' configuration, but you can add new drives and change the state of existing drives.

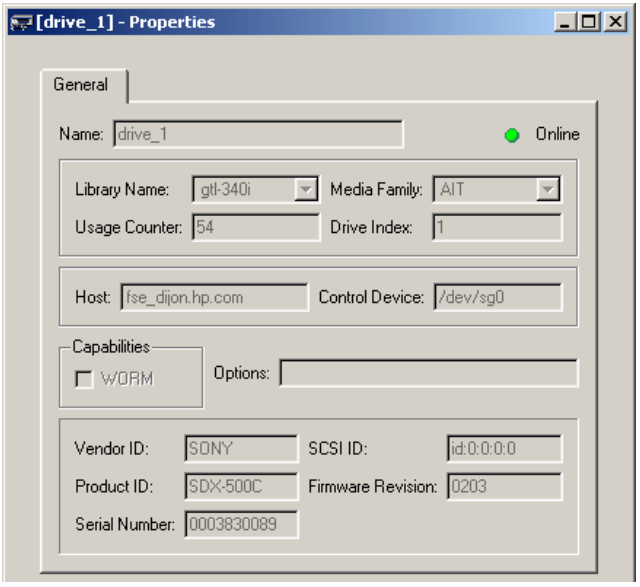
The status bar displays the total number of drives and indicates the number of drives in each of the following states:

	online		offline
	in use		error

Drive

Right-click over a drive name to do the following:

- Change the drive's state (enable/disable)
- View and edit configuration parameters
- Delete the drive
- View a configuration file
- Display the properties of the drive.

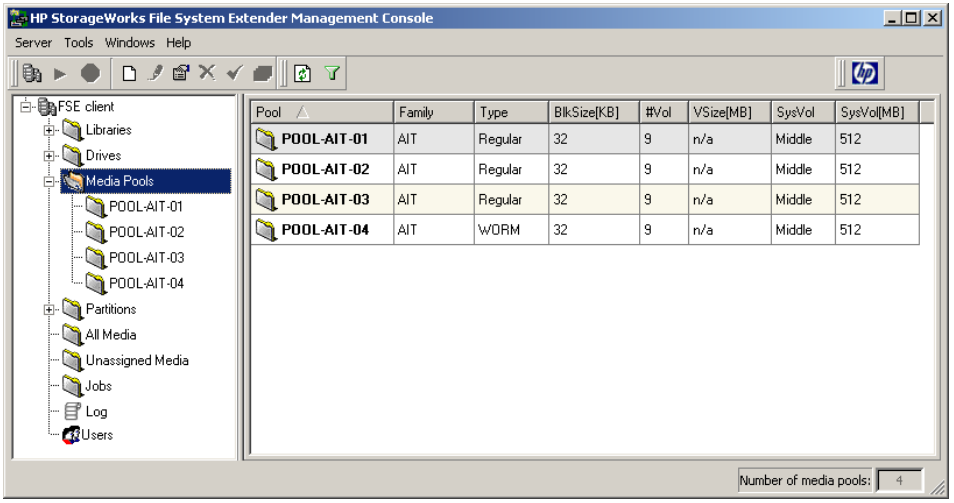


You can edit the configuration. For a description of the property fields, see the *FSE User Guide*.

Media Pools Container

Right-click over the **Media Pools** object in the object tree to do the following:

- Create a new media pool
- Open a new window from the current Management Console context
- Display general properties of existing media pools.



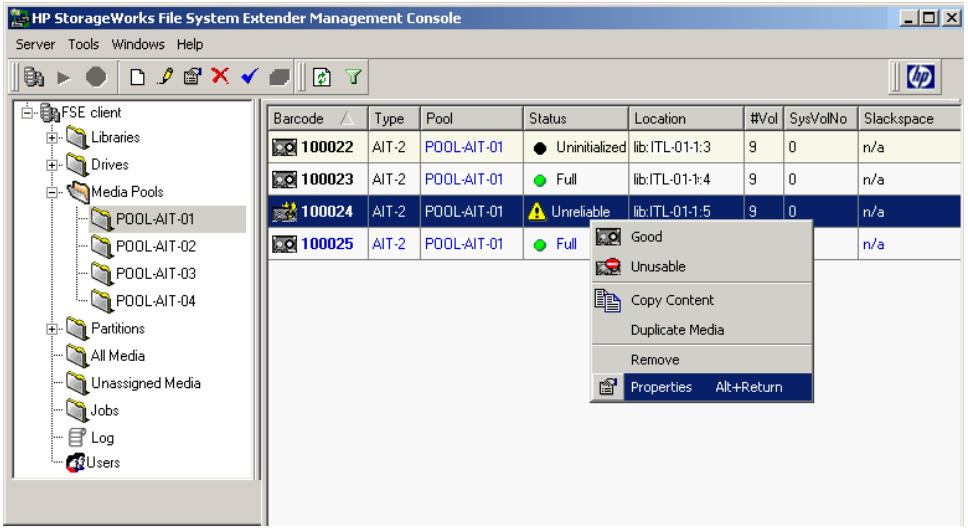
The properties pane shows the list of all media pools in the FSE installation. The list indicates the media pools' types, status and other properties. Double-click a media pool to open a properties window for the pool.

The status bar indicates the total number of media pools existing in the FSE installation.

Media Pool

Right-click a media pool name in the object tree to do the following:

- Add a medium to the media pool by entering its barcode. Note that a medium cannot belong to two different media pools.
- View and edit configuration parameters
- Delete the selected media pool
- View a configuration file
- Open a new window from the current Management Console context
- Display the properties of the media pool.



The properties pane shows a list of all media in the media pool. For each medium, the list indicates the type, status and other properties. Double-click a medium name to open a media properties window.

The Slackspace attribute is only available for media that have been scanned for reorg. If the medium is empty the value displayed will be zero. The attribute is calculated as the average slack space of all media volumes.

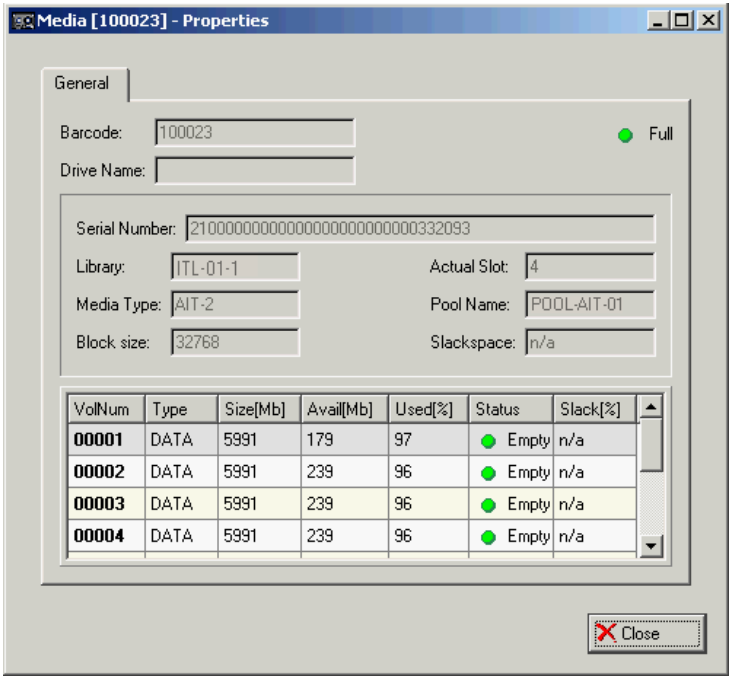
The status bar shows the total number of media, and also indicates the numbers of media in the following conditions:

	good		unreliable
	unusable		uninitialized

Media

Right-click a medium name in the list to do the following:

- Mark the medium as **Good**, **Unreliable**, or **Unusable**
- Format and initialize the medium
- Re-create fast recovery information for the medium
- Reorganize the data on the medium
- Copy the medium content
- Duplicate the medium
- Assign the medium to a media pool
- Remove the medium from the media pool
- Display the properties of the medium.



You cannot edit these properties, however, the volume administration action is enabled. For a description of the property fields, see the *FSE User Guide*.

Note: Display of the Slackspace attribute, in the media pool list, is controlled by the *"Media slack space calculation"* setting (see "*Tools Menu*" on page 37). Slack space information for media volumes (`Slack [%]` attribute) is not affected by this setting, though.

Right-click on a volume name to:

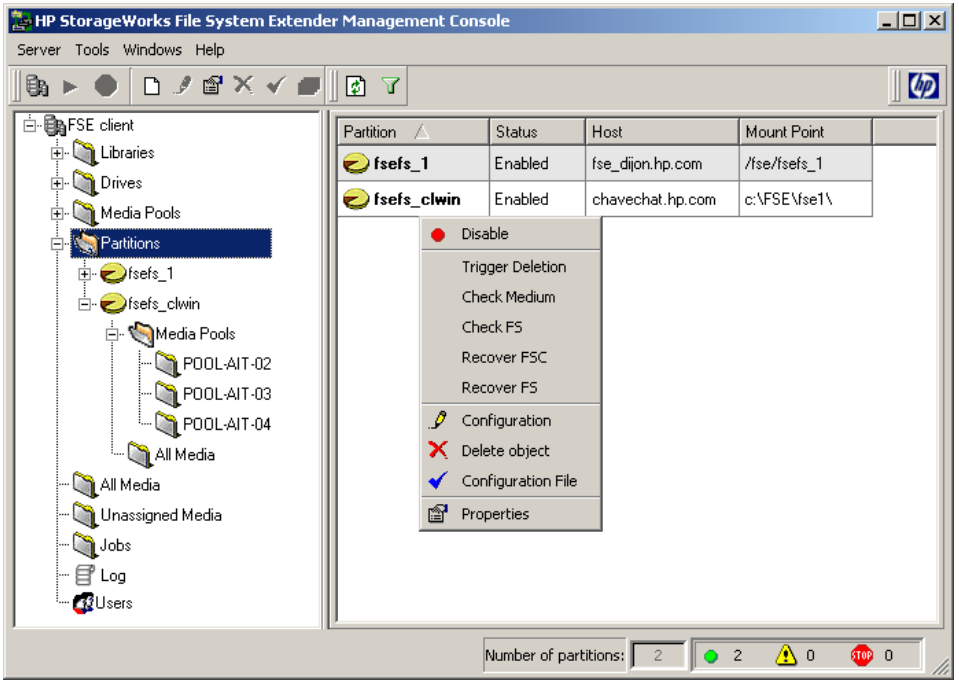
— Reorganize the volume

— Close the volume.

Partitions Container

Right-click over the **Partitions** object in the object tree to do the following:

- Create a new partition
- Open a new window from the current Management Console context
- Display general properties of existing partitions.



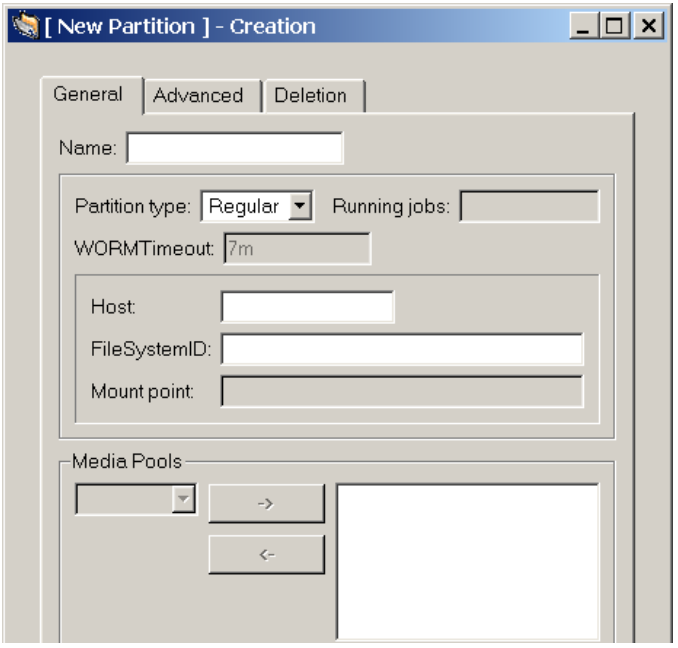
The properties pane displays a list of all partitions. The list indicates the partitions' status, connected hosts, and mount points. Double-click a partition name to open a properties window for the partition.

The status bar displays the total number of partitions and indicates the number of partitions in each of the following states:

 enabled  other  disabled

New Partition

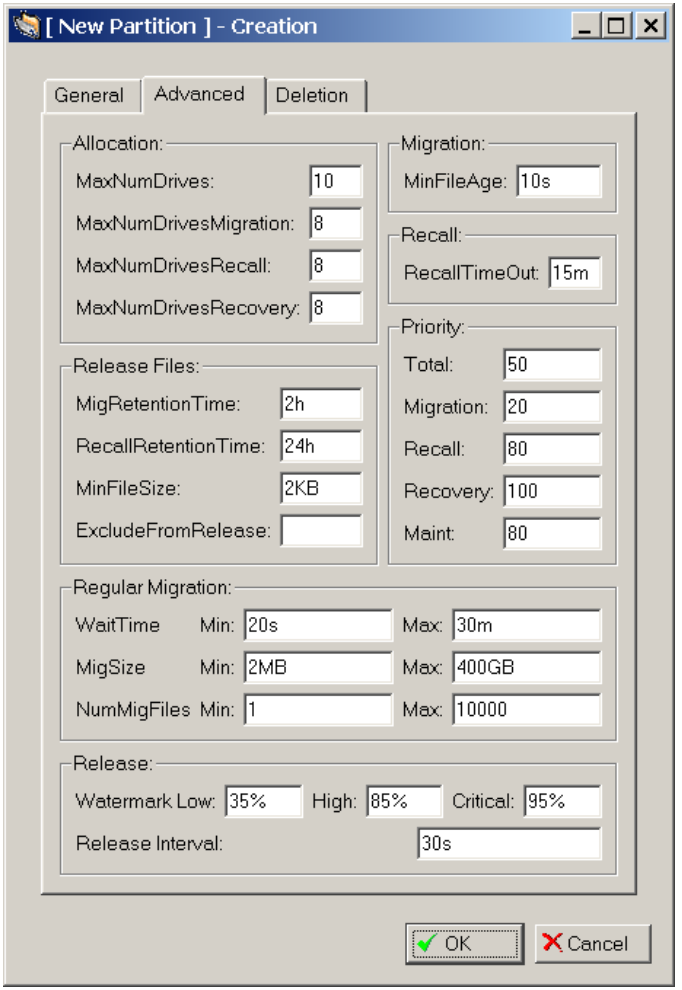
Right-click **Partitions** in the object tree and select **New** (or click the  icon in the toolbar). The **New Partition** window opens:



For a description of the property fields, see the *FSE User Guide*.

Note: Media pools can only be assigned to a partition when the partition is being created.

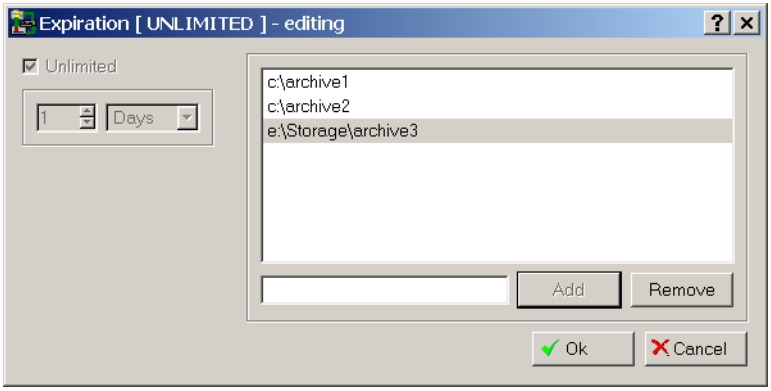
The **Advanced** tab displays the advanced partition properties:



For a description of the property fields, see the *FSE User Guide*.

The *Deletion* tab shows the delete policies assigned to the partition.

When creating a new delete policy or modifying an existing one, the following dialog is displayed:



For details of delete policies, see the *FSE User Guide*.

Partition

Right-click over a partition name in the list to do the following:

- Change the partition's state (enable/disable)
- Trigger deletion of obsolete files
- Check a medium
- Check the file system on the partition
- Recover the File System Catalog for the partition
- Recover the file system on the partition
- Scan for reorganization
- View and edit configuration parameters
- Delete the partition
- View a configuration file
- Display the properties of the partition.

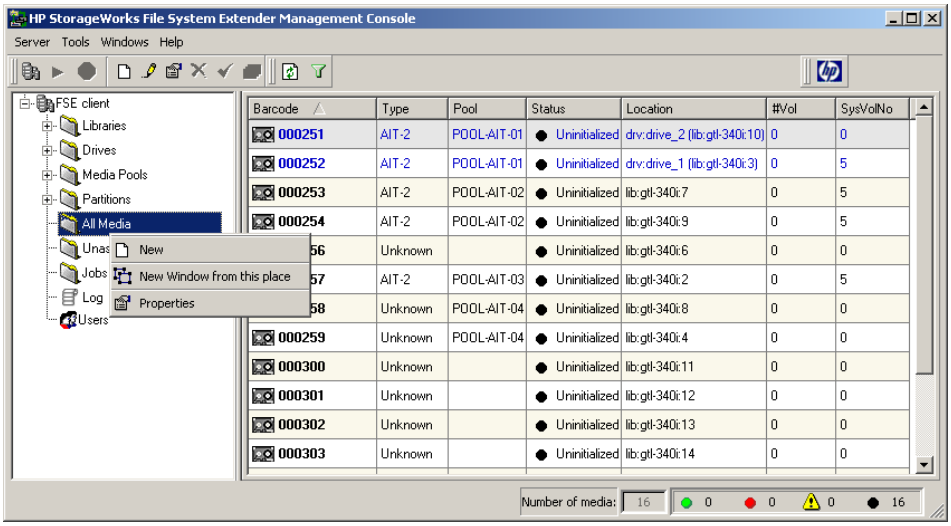
The **General Properties** page shows properties for the selected partition, and the **Advanced Properties** page shows extended properties for the selected partition. For a description of the property fields, see the *FSE User Guide*.

All Media Container

Selecting **All Media** in the object tree shows a list of all media detected during the inventory. The **All Media** option is also available in the tree under the names of partitions in the **Partitions** container; in this case it displays a list of media belonging to the media pools assigned to that partition.

Right-click over the **All Media** object to do the following:

- Add a new medium to a media pool
- Open a new window from the current Management Console context
- Display general properties of all media.



The properties pane shows a list of all media in the FSE installation (or belonging to media pools assigned to the selected partition). The list indicates the media's types, status, and other properties. Double-click a medium in the list to open a properties window for the medium.

The status bar displays the total number of media and indicates the number of media in each of the following states:

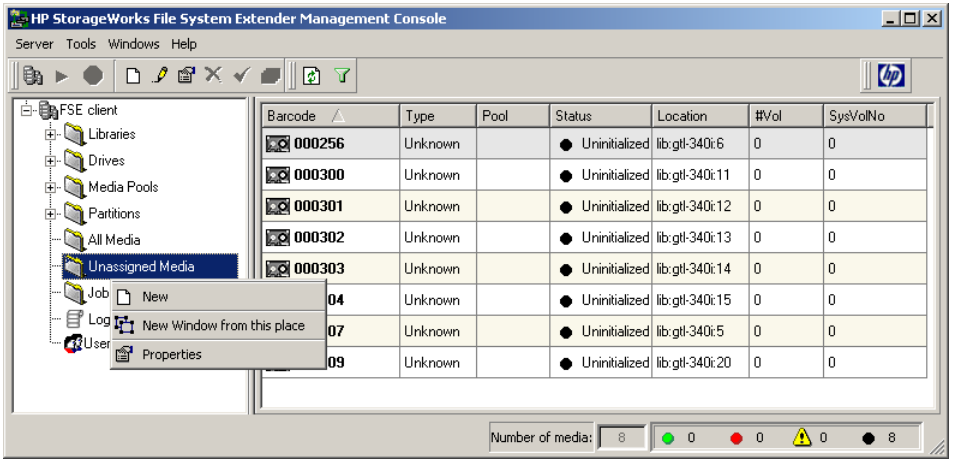
	good		unreliable
	unusable		uninitialized

Unassigned Media Container

Selecting the **Unassigned Media** object in the tree shows a list of all media detected during the inventory that are currently not assigned to any media pool.

Right-click the **Unassigned Media** object in the object tree to do the following:

- Add a new medium to a media pool
- Open a new window from the current Management Console context
- Display general properties of unassigned media.



The properties pane displays a list of all unassigned media in the FSE installation. The list indicates the media's types, status, and other properties. Double-clicking a medium in the list opens a properties window for the medium.

The status bar displays the total number of media and indicates the number of media in each of the following states:

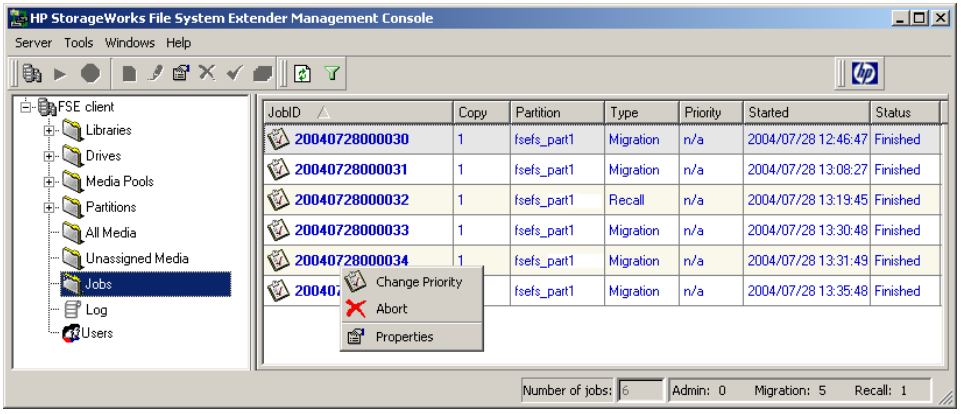
good		unreliable	
unusable		uninitialized	

Jobs Container

Selecting the **Jobs** object in the tree lists all jobs running or finished in FSE.

Right-click a job in the list to do the following:

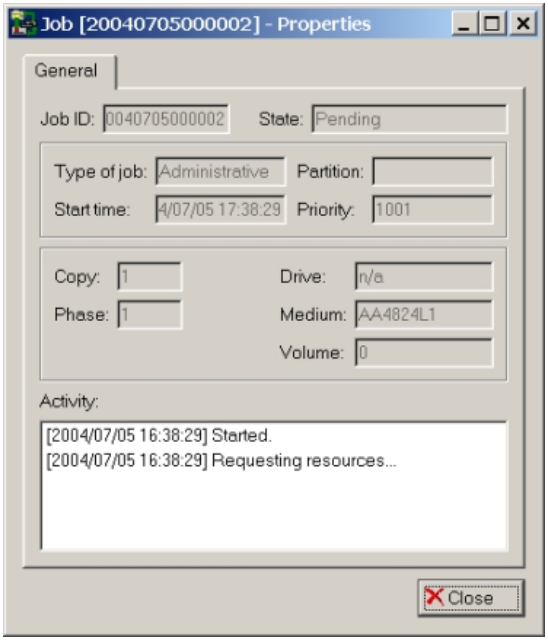
- Change the job's priority
- Abort the job
- Display the properties of the job.



The jobs pane shows all jobs created by the FSE installation to execute the user-requested operations (for example, load media A into drive B). Double-click the selected job to show its details.

Only jobs that are currently running and up to 25 previous jobs are displayed.

The status bar shows the total number of current jobs, and also indicates how many of them are administration, migration, and recall jobs.

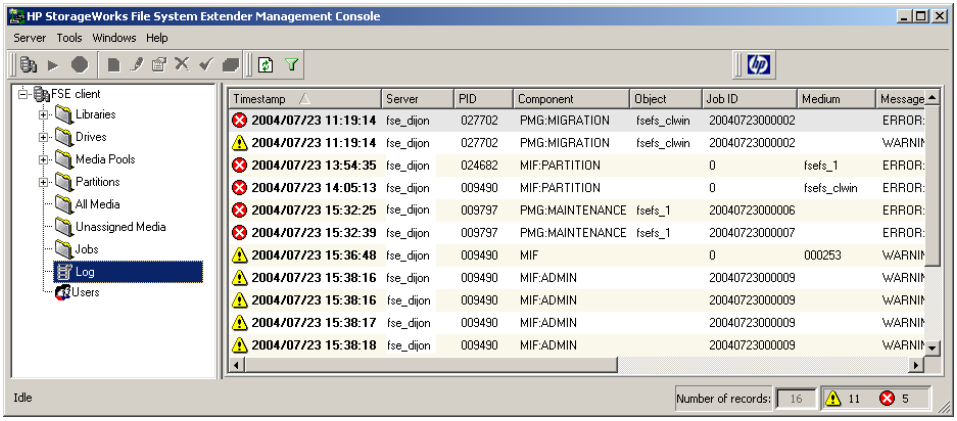


The properties pane shows the complete properties of the selected job. For a description of the property fields, see the *FSE User Guide*.

The **Activity** pane shows the current job activity (only for the jobs initiated by the Management Console server after its latest start).

Log Container

Selecting the **Log** object in the tree shows the error and warning messages produced by the FSE installation in its log file. The look and control is similar to the Windows Event Viewer.



The status bar shows the total number of error and warning entries in the log, and also indicates how many there are of each type:

 warning  error

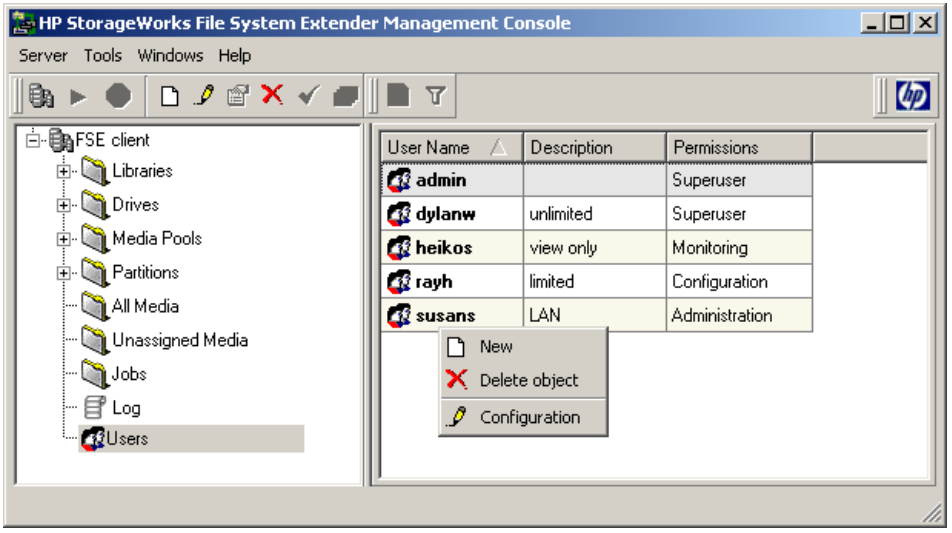
Users Container

Select the **Users** object in the tree to list users configured to access the Management Console server. Double-click a user's name to open a user properties window.

Right-click a user in the list to do the following:

- Add a new user
- Delete the selected user

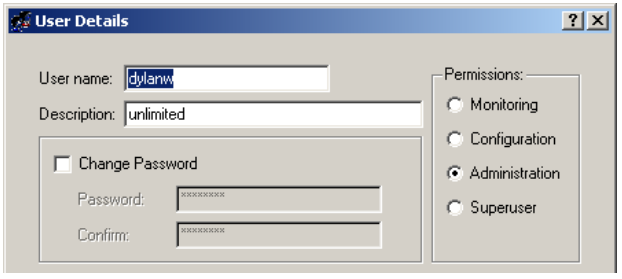
- Display details of the user.



Caution: The first time you log in to the FSE Management Console, change the “admin” user settings immediately (by default, the password is empty!).

The users pane lists all users from the FSE server database configured to access the system. Only users with superuser permissions can add and delete users, and modify details such as password, description and permissions.

Add and modify users in the **User Details** pop-up dialog:



After you have made changes, the user list is refreshed to reflect the actual state of the user database.

User Permissions

User permissions are defined as follows:

- Users with **Monitoring** permissions are allowed to view the current configuration and system activity.
- Users with **Administration** permissions are allowed to manage configured object properties but cannot remove them or add new objects or resources.
- Users with **Configuration** permissions are allowed to manage the complete configuration (add, remove, modify) of all resources except FSE users.
- **Superusers** are allowed to manage all resources of the FSE installation.

Note: Only superusers are authorized to perform user management operations.